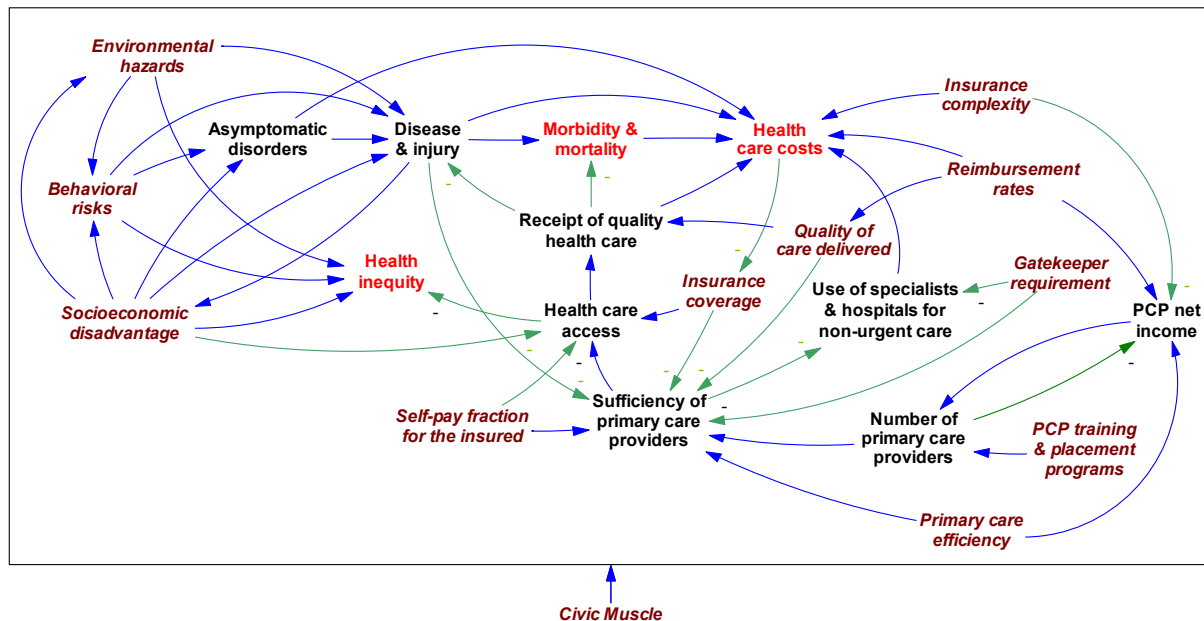


Understanding the Big Picture

Most parts of the U.S. health system—so often discussed separately—are in fact connected.



Description

The game's simulator tracks the entire U.S. population and its movement among states of health, risk behavior, environmental exposures, and socioeconomic advantage or disadvantage. The disadvantaged are more vulnerable to disease and injury than the advantaged are. This, combined with worse access to care, means that the disadvantaged experience greater morbidity and mortality per capita than the advantaged do, as well as higher health care costs. Another factor affecting health outcomes and cost is the quality of care delivered. Quality of care may be improved by encouraging adoption of guidelines for best practice, but the incentive for such adoption is hindered if insurance reimbursement rates are not adequate.

Definitions and Brief Explanations (in alphabetical order)

Asymptomatic disorders: Precursors to chronic disease for some people; these include hypertension, high cholesterol, pre-diabetes, and early stage chronic conditions (e.g. HIV, cancer) which, in many cases, may be controlled with medications and/or lifestyle change.

Behavioral risks: Unhealthy behaviors that increase the risk of disease or injury, or of developing organic disorders. Some of these behaviors include smoking, poor diet, physical inactivity, drug and alcohol abuse, unprotected sex, and violence. The fraction of people with risky behavior may increase over time due to behavioral lapse or decrease due to behavioral reform. *Players may enable healthier behaviors among the advantaged and/or the disadvantaged population.*

Civic muscle: The ability to enact chosen interventions at their desired strength. Many intervention options require up-front investment. The extent to which the full required investment can be made depends on having sufficient capacity to take action. Civic muscle reflects people's power to focus time, attention, and resources on a particular course of change. Any one of the available interventions may provoke resistance from vested interests who seek to maintain the status quo. Effective leadership and broad-based organizing among institutions and citizens are necessary to overcome that resistance and ensure that the chosen interventions get the necessary funding and support to be enacted. *Players may strengthen civic muscle with a view toward acting more effectively elsewhere in the system.*

Disease and injury: Conditions are that are disabling or symptomatic (or would be if not effectively managed) or are imminently life-threatening (e.g. a later-stage cancer).

Environmental hazards: Hazards and pollutants in the physical environment that increase the risk of disease or injury. The fraction of people in unsafe surroundings may increase over time due to environmental degradation or decrease due to environmental remediation. *Players may build safer environments for the advantaged and/or the disadvantaged population.*

Gatekeeper requirement: A policy to extend the requirement (already imposed under some health plans) that patients first go to a primary care provider and get a referral before seeing a specialist. *Players may enact or later remove this requirement.*

Health care access: The ability to obtain quality care from physicians and hospitals. Access requires insurance coverage and, in the case of office care, a sufficient number of primary care providers. Both of these requirements are greater obstacles for the disadvantaged, who initially are less likely to be insured and more likely to encounter a shortage of providers.

Health care costs: Total health care spending for all personal health services and supplies, plus the administrative costs of health insurance (as described in the National Health Expenditures database). Together, these categories cover 90% of all costs in the NHE, excluding only public health activity, research, and investment in structures and fixed equipment. Leading categories of personal health costs are hospital visits, physician office visits, use of medical products, and spending on nursing homes and home health care. Morbidity increases costs through demand for *urgent and acute care*. But effective *routine and preventive care* is also a major cost driver, and would become more so if the extent of such care were to increase.

Health inequity: Degree of inequality between the disadvantaged and the advantaged with regard to health risks, health care access, and health outcomes (morbidity, mortality). Greater equity is attainable by (a) reducing the total number of people who are disadvantaged; and/or (b) reducing the excess vulnerability or barriers to health care that are associated with being disadvantaged. An index of inequity calculates the fraction of total unhealthy days attributable to the gap between the disadvantaged and the advantaged.

Insurance complexity: The number of different health plans and their internal cost of administration, as well as the burden on the billing function of physician offices. Standardized health insurance plans (analogous to what some states have done with auto insurance) could reduce the burden for physicians, but would leave intact a private system with high costs of marketing and negotiation. A single-payer approach could simplify the burden for physicians

and eliminate these extra costs of private insurance administration. *Players may standardize insurance plans, or implement a single-payer approach.*

Insurance coverage: The fraction of people with private or government-provided health insurance. *Players may expand insurance coverage for the advantaged and/or the disadvantaged population.*

Morbidity and mortality: The number of unhealthy days per month (morbidity) associated with disease and injury, along with the number of urgent events requiring emergency hospital care. Some fraction of those urgent events result in death (mortality).

Number of primary care providers (PCPs): The total number of physicians in general practice, family practice, internal medicine, geriatrics, pediatrics, and obstetrics/gynecology, as well as nurse practitioners. We distinguish PCPs who primarily serve either advantaged or disadvantaged clients; many of the latter work in public health clinics rather than private practices or managed care organizations.

PCP net income: The average revenue of PCPs minus their average operating and billing costs. Net incomes are typically higher for PCPs who primarily serve the advantaged rather than the disadvantaged population. Interventions can affect net income in 3 ways: (1) revenue goes up or down based on reimbursement rates; (2) operating costs go down with greater office efficiency; and (3) billing expenses go down with simpler insurance schemes (standardized plans or single-payer).

PCP training and placement programs: Efforts to offer scholarships, subsidies, and guaranteed placement programs in order to increase the number of new practicing PCPs. *Players may offer these incentives for providers to the advantaged population, and/or for providers to the disadvantaged.*

Primary care efficiency: The fraction of PCPs whose practices or clinics are streamlined to run as efficiently as possible. This is sometimes referred to as idealized design of clinical office practices (IDCOP). The IDCOP approach comprises a number of techniques for appointment scheduling, staff utilization, and use of information technology. *Players may boost overall primary care efficiency.*

Quality of care delivered: The degree to which physicians enact best practices for preventive and chronic care, and hospitals enact best practices for urgent care. Reimbursement rates affect the incentive to adopt best practices and thereby affect quality. Quality can also be affected by programs to educate and support or facilitate adherence to best practice guidelines. *Players may improve: (1) preventive and chronic care, which includes screening to identify health concerns, as well as enhanced management of diseases, injuries, and asymptomatic disorders; and/or (2) urgent care, to treat events that require care in the emergency room or in an intensive care unit.*

Receipt of quality health care: The extent to which quality health care is received by the population. Different aspects of quality care confer different benefits: *Morbidity* declines through broader receipt of disease and injury management. *Mortality* drops for those suffering urgent events through broader receipt of quality urgent hospital care. (Quality urgent care also reduces the likelihood of hospital admission and of the subsequent need for nursing home or

home health care.) And *onset of symptomatic disease* in the first place slows through broader receipt of asymptomatic disorder management. Also, the opportunity to receive disease management and asymptomatic disorder management is enhanced by broader receipt of appropriate routine screening.

Reimbursement rates: Amounts per visit paid by insurers to physicians or hospitals, expressed relative to their initial values (=1). The relative reimbursement rate for *office visits* affects payments for visits to primary care physicians and specialists. The relative reimbursement rate for *hospital visits* affects payments for hospital inpatient stays as well as visits to emergency and outpatient departments. *Players may modify these reimbursement rates up or down.*

Self pay fraction for the insured: The fraction of health care costs, including self-paid premiums and out-of-pocket expenses such as co-pays and deductibles, that is paid by those who have insurance coverage, sometimes known as the “cost sharing fraction.” *Players may raise or lower the self pay fraction.*

Socioeconomic disadvantage: Low socioeconomic status, defined operationally as the fraction of the population in households earning less than \$25,000 per year. For simplicity, we differentiate only between the disadvantaged and the advantaged, and do not differentiate more groups along the social gradient. Most variables in the simulator have separate values for the advantaged vs. the disadvantaged population. The fraction of disadvantaged people may increase over time as people fall into disadvantage or decrease as they escape disadvantage. *Players may create pathways to advantage, for example, by assuring better education, job training, or living wage policies.*

Sufficiency of primary care providers (PCPs): The adequacy of primary care provider supply to meet potential demand for their services. The potential demand for visits increases with the size of the insured (and not self-paying) population and, in particular, the number of patients with acute problems or those being managed routinely for chronic problems. Higher quality of care puts a greater time burden on PCPs, but that burden could be reduced somewhat through improvements in operational efficiency.

Use of specialists & hospitals for non-urgent care: The amount of non-urgent care provided by specialists and hospitals rather than PCPs. A shortage of primary care providers leads more people to seek care by specialists and hospital outpatient clinics and emergency departments for non-urgent matters. Much of the demand for such care among the advantaged population can switch over to specialists, but this is not so for the disadvantaged population, who more often end up at hospital clinics for minor acute problems. Also, specialists can accept additional patients (as long as they have private insurance) for ongoing management of chronic disease and organic disorders, but hospitals lack this flexibility. For this reason, many disadvantaged people, even if they have Medicaid, will end up without appropriate routine care if there is a shortage of PCPs in their area.